

# ABSTRACT OF THE DISCLOSURE

A method and a micro power generator for generating electrical power from low frequency, vibrational energy includes a frequency up-conversion process. The generator is preferably an electromagnetic, vibration-to-electrical power generator which can efficiently scavenge energy from low frequency external vibrations. The generator up-converts low frequency environmental vibrations to a much higher frequency through a mechanical frequency up-converter, and hence provides efficient energy conversion even at low frequencies. This mechanical frequency up-conversion process can be realized in a number of ways. A magnetic method is described as an example. After frequency up-conversion, voltage is induced on coils mounted on resonators by electromagnetic induction. Due to the movement of the coils on their respective resonating cantilevers with respect to the magnet, voltage is generated on the coils and energy conversion is realized.